Safety Data Sheet

Revision Date: 08/07/13
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**30042, 30042-5XX, & 30142 / 502.2 Calibration Mix #1**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Revision Number:	8
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Flammable Liquid Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Inhalation Vapour Category 3
Acute Toxicity - Inhalation Gas Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

GHS Signal Word:

Danger

GHS Hazard:

Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled.
Toxic if inhaled.
Causes damage to organs.

GHS Precautions:

Safety Precautions:

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do no eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment see section 4.
Specific measures see section 4.

	Rinse mouth. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. In case of fire: Use extinguishing media in section 5 for extinction.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal:	Dispose of contents/container according to section 13 of the SDS.
Single Exposure Target Organs:	No data available.
Repeated Exposure Target Organs:	No data available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	98.800000
trichlorofluoromethane	75-69-4		0.200000
chloroethane	75-00-3	200-830-5	0.200000
Vinyl chloride	75-01-4	200-831-0	0.200000
methyl bromide	74-83-9	200-813-2	0.200000
chloromethane (methyl chloride)	74-87-3	200-817-4	0.200000
dichlorodifluoromethane	75-71-8		0.200000

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Eyes:	Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.
Skin Contact:	Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water spray or fog may also be effective for extinguishing if swept across the base of the fire. Water can also be used to absorb heat and keep exposed material from being damaged by fire.
Fire and/or Explosion Hazards:	Vapors may be ignited by heat, sparks, flames or other sources of ignition at or above the low flash point giving rise to a Class B fire. Vapors are heavier than air and may travel to a source of ignition and flash back
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained toxic breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface. Use water spray/fog for cooling.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area.

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
trichlorofluoromethane	75-69-4	ND		No TLV	1000 ppm TWA; 5600 mg/m3 TWA
chloroethane	75-00-3	ND		100 ppm TWA	1000 ppm TWA; 2600 mg/m3 TWA
Vinyl chloride	75-01-4	ND		1 ppm TWA (5) ppm TWA; (13) mg/m3 TWA	1 ppm TWA
methyl bromide	74-83-9	ND		1 ppm TWA	No data available.
chloromethane (methyl chloride)	74-87-3	ND	100 ppm STEL	50 ppm TWA	100 ppm TWA
dichlorodifluoromethane	75-71-8	ND		1000 ppm TWA	1000 ppm TWA; 4950 mg/m3 TWA

Personal Protection:

Engineering Measures: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color: No data available.
Odor: Mild
Physical State: No data available.
pH: No data available.
Vapor Density: 1.1 (air = 1)
Melting Point: -98 ℃
Flash Point: -108

Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36.0
Lower Flammable/Explosive Limit, % in air:	6.0
Autoignition Temperature:	464 deg C
Decomposition Temperature:	No data available.
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 ℃
Evaporation Rate:	No data available.
Odor Threshold:	No data available.
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	No data available.
VOC % by weight:	98.80
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	No data available.High temperatures
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	Contains a probable or known human carcinogen.
Reproductive and Developmental Toxicity:	Contains a known human reproductive and/or developmental hazard.
Inhalation:	Upon prolonged and/or repeated exposure, can cause severe respiratory irritation, dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.Toxic! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs).
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage. Upon prolonged or repeated contact, can cause minor skin irritation, defatting, and dermatitis.
Skin Absorption:	Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage
Ingestion:	Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 83.2 mg/L 4 h; Oral LD50 Rat 5628 mg/kg
Vinyl chloride Ethylene, chloro-	75-01-4	Inhalation LC50 Rat : 18 pph/15M; Oral LD50 Rat : 500

mg/kg

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.	
Vinyl chloride	75-01-4	Present

ACGIH:

Chemical Name	CAS No.	
Vinyl chloride	75-01-4	A1 - Confirmed Human Carcinogen A1-confirmed human carcinogen

NIOSH:

Chemical Name	CAS No.	
Vinyl chloride	75-01-4	potential occupational carcinogen

NTP:

Chemical Name	CAS No.	
Vinyl chloride	75-01-4	Known Carcinogen

IARC:

Chemical Name	CAS No.	Group No.
Vinyl chloride	75-01-4	Group 1
No data.		Group 2A
No data.		Group 2B

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility: No data
Persistence: No data
Bioaccumulation: No data
Degradability: Biodegrades slowly.
Ecological Toxicity Data: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product: Spent or discarded material is a hazardous waste.
Disposal Methods: Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging: Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:
DOT Proper Shipping Name: Methanol
UN Number: UN1230
Hazard Class: 3
Packing Group: II

International:
IATA Proper Shipping Name: Methanol
UN Number: UN1230
Hazard Class: 3 (6.1)
Packing Group: II

Marine Pollutant: No

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
trichlorofluoromethane	75-69-4	X	X	-	X
chloroethane	75-00-3	X	X	-	X
Vinyl chloride	75-01-4	X	X	-	X
methyl bromide	74-83-9	X	X	X	X
chloromethane (methyl chloride)	74-87-3	X	X	-	X

dichlorodifluoromethane	75-71-8	X	X	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Chloroethane	75-00-3	Prop 65 Cancer
Vinyl chloride	75-01-4	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox
Methyl bromide	74-83-9	Prop 65 Devolop Tox
Methyl chloride	74-87-3	Prop 65 Devolop Tox
Methyl chloride	74-87-3	Prop 65 Rep Male

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
trichlorofluoromethane	75-69-4	X	X	X	X
chloroethane	75-00-3	X	X	X	X
Vinyl chloride	75-01-4	X	X	X	X
methyl bromide	74-83-9	X	X	X	X
chloromethane (methyl chloride)	74-87-3	X	X	X	X
dichlorodifluoromethane	75-71-8	X	X	X	X

16. OTHER INFORMATION

Prior Version Date: 09/20/10

Disclaimer: Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding prodcuts described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.

Safety Data Sheet

Revision Date: 08/07/13
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**30043, 30043-5XX, & 30143 / 502.2 Calibration Mix #2**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Revision Number:	6
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Flammable Liquid Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Inhalation Vapour Category 3
Acute Toxicity - Inhalation Gas Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

GHS Signal Word:

Danger

GHS Hazard:

Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled.
Toxic if inhaled.
Causes damage to organs.

GHS Precautions:

Safety Precautions:

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do no eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment see section 4.
Specific measures see section 4.

	Rinse mouth. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. In case of fire: Use extinguishing media in section 5 for extinction.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal:	Dispose of contents/container according to section 13 of the SDS.
Single Exposure Target Organs:	No data available.
Repeated Exposure Target Organs:	No data available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	97.200000
trans-1,2-dichloroethylene	156-60-5	205-860-2 205-859-7 205-860-2 205-859-7 208-750-2	0.200000
bromodichloromethane	75-27-4		0.200000
Carbon tetrachloride	56-23-5	200-262-8	0.200000
bromoform	75-25-2	200-854-6	0.200000
1,1-Dichloroethylene	75-35-4	200-864-0	0.200000
Trichloroethene	79-01-6	201-167-4	0.200000
2,2-dichloropropane	594-20-7		0.200000
trans-1,3-Dichloropropylene	10061-02-6		0.200000
1,3-dichloropropane	142-28-9		0.200000
1,1-dichloroethane	75-34-3	200-863-5	0.200000
Dichloromethane	75-09-2	200-838-9	0.200000
cis-1,3-Dichloropropene	10061-01-5	233-195-8 233-195-8 208-826-5	0.200000
1,1,1-Trichloroethane	71-55-6	200-756-3	0.200000

chloroform	67-66-3	200-663-8	0.200000

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately Remove the victim from the contaminated area while protecting yourself from exposure by wearing an appropriate respirator. Put a similar respirator on the victim

Eyes: Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention

Skin Contact: Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately. Do NOT take contaminated clothing home.

Ingestion: Severely irritating. Do not induce vomiting. Seek medical attention immediately. Drink 2 glasses of water or milk to dilute. Never give anything by mouth to an unconscious person

5. FIRE- FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
trans-1,2-dichloroethylene	156-60-5	ND		200 ppm TWA	No data available.

bromodichloromethane	75-27-4	ND		No TLV	No data available.
Carbon tetrachloride	56-23-5	ND	10 ppm STEL 10 ppm STEL; 63 mg/m3 STEL	5 ppm TWA 5 ppm TWA; 31 mg/m3 TWA	10 ppm TWA
bromoform	75-25-2	ND		0.5 ppm TWA	0.5 ppm TWA; 5 mg/m3 TWA
1,1-Dichloroethylene	75-35-4	ND	(20) ppm STEL; (79) mg/m3 STEL	5 ppm TWA 5 ppm TWA; 20 mg/m3 TWA	No PEL established
Trichloroethene	79-01-6	1000 ppm IDLH	25 ppm STEL	10 ppm TWA	100 ppm TWA
2,2-dichloropropane	594-20-7	ND		No TLV	No data available.
trans-1,3-Dichloropropylene	10061-02-6	ND		No TLV	No data available.
1,3-dichloropropane	142-28-9	ND		No TLV	No data available.
1,1-dichloroethane	75-34-3	ND		100 ppm TWA	100 ppm TWA; 400 mg/m3 TWA
Dichloromethane	75-09-2	2300 ppm IDLH		50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)
cis-1,3-Dichloropropene	10061-01-5	ND		No TLV	No data available.
1,1,1-Trichloroethane	71-55-6	ND	450 ppm STEL 450 ppm STEL; 2460 mg/m3 STEL	350 ppm TWA 350 ppm TWA; 1910 mg/m3 TWA	350 ppm TWA; 1900 mg/m3 TWA
chloroform	67-66-3	500 ppm IDLH		10 ppm TWA	No data available.

Personal Protection:

Engineering Measures: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.Engineering controls must be designed to meet the OSHA chemical specific standard in 29 CFR 1910.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	No data available.
Odor:	Mild
Physical State:	No data available.
pH:	No data available.
Vapor Density:	1.1 (air = 1)
Melting Point:	-98 ℃
Flash Point:	52
Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36.0
Lower Flammable/Explosive Limit, % in air:	6.0
Autoignition Temperature:	464 deg C
Decomposition Temperature:	No data available.
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 ℃
Evaporation Rate:	No data available.
Odor Threshold:	ND
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	2.64
VOC % by weight:	97.20
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	No data available.Contamination High temperatures
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents Caustics (bases)
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure: Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity: None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

Inhalation Toxicity: Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.

Skin Contact: Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Eye Contact: Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

Ingestion Irritation: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.

Ingestion Toxicity: Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains a probable or known human carcinogen.

Reproductive and Developmental Toxicity: Contains a known human reproductive and/or developmental hazard.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Toxic! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs).

Skin Contact: Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

Ingestion: Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:
NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 83.2 mg/L 4 h; Oral LD50 Rat 5628 mg/kg
Carbon tetrachloride	56-23-5	Inhalation LC50 Rat : 8000 ppm/4H; Inhalation LC50 Mouse : 9526 ppm/8H; Oral LD50 Rat : 2350 mg/kg; Oral LD50 Mouse : 8263 mg/kg; Dermal LD50 Rabbit : >20 gm/kg
Ethylene, trichloro-	79-01-6	Inhalation LC50 Rat 8000 ppm 4 h; Inhalation LC50 Rat 26300 ppm 1 h
Methane, dichloro-	75-09-2	Oral LD50 Rat >2000 mg/kg
Chloroform	67-66-3	Dermal LD50 Rabbit >20 g/kg; Inhalation LC50 Rat 47702 mg/m3 4 h

Component Carcinogenic Data:
OSHA:

Chemical Name	CAS No.	
Bromodichloromethane	75-27-4	Present
Carbon tetrachloride	56-23-5	Present
Trichloroethylene	79-01-6	Present
Methylene chloride	75-09-2	25 ppm TWA (8 hr.); 125 ppm STEL (15 min.); 12.5 ppm Action Level (see 29 CFR

		1910.1051); effective date for respiratory protection for certain employers to acheive the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate
Chloroform	67-66-3	Present

ACGIH:

Chemical Name	CAS No.	
Carbon tetrachloride	56-23-5	A2 - Suspected Human Carcinogen
Trichloroethylene	79-01-6	A2 - Suspected Human Carcinogen
Dichloromethane	75-09-2	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Chloroform	67-66-3	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

NIOSH:

Chemical Name	CAS No.	
Carbon tetrachloride	56-23-5	potential occupational carcinogen
Trichloroethylene	79-01-6	potential occupational carcinogen
Methylene chloride	75-09-2	potential occupational carcinogen
Chloroform	67-66-3	potential occupational carcinogen

NTP:

Chemical Name	CAS No.
No data available.	

IARC:

Chemical Name	CAS No.	Group No.
Trichloroethylene	79-01-6	Group 1
No data.		Group 2A
Bromodichloromethane	75-27-4	Group 2B
Carbon tetrachloride	56-23-5	Group 2B
Monograph 20, Supplement 7, Monograph 71; 1998		
Dichloromethane	75-09-2	Group 2B
Chloroform	67-66-3	Group 2B

12. ECOLOGICAL INFORMATION

Overview:	Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility:	No data
Persistence:	No data
Bioaccumulation:	No data
Degradability:	Biodegrades slowly.
Ecological Toxicity Data:	No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:	Spent or discarded material is a hazardous waste.
Disposal Methods:	Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging:	Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:	Flammable liquids, toxic, n.o.s. (Methanol, Dichloromethane)
UN Number:	UN1992
Hazard Class:	3(6.1)
Packing Group:	II

International:

IATA Proper Shipping Name:	Flammable liquids, toxic, n.o.s. (Methanol, Dichloromethane)
UN Number:	UN1992

Hazard Class: 3 (6.1)
Packing Group: II

Marine Pollutant: No

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
trans-1,2-dichloroethylene	156-60-5	X	-	-	X
bromodichloromethane	75-27-4	X	X	-	X
Carbon tetrachloride	56-23-5	X	X	-	X
bromoform	75-25-2	X	X	-	X
1,1-Dichloroethylene	75-35-4	X	X	-	X
Trichloroethene	79-01-6	X	X	-	X
2,2-dichloropropane	594-20-7	-	-	-	X
trans-1,3-Dichloropropylene	10061-02-6	-	X	-	X
1,3-dichloropropane	142-28-9	X	-	-	X
1,1-dichloroethane	75-34-3	X	X	-	X
Dichloromethane	75-09-2	X	X	-	X
cis-1,3-Dichloropropene	10061-01-5	-	-	-	-
1,1,1-Trichloroethane	71-55-6	X	X	-	X
chloroform	67-66-3	X	X	X	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Bromodichloromethane	75-27-4	Prop 65 Cancer
Carbon tetrachloride	56-23-5	Prop 65 Cancer
Bromoform	75-25-2	Prop 65 Cancer
Trichloroethylene	79-01-6	Prop 65 Cancer
1,1-Dichloroethane	75-34-3	Prop 65 Cancer
Dichloromethane	75-09-2	Prop 65 Cancer
Dichloromethane (Methylene chloride)		
Chloroform	67-66-3	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox
Chloroform	67-66-3	Prop 65 Devolop Tox

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
trans-1,2-dichloroethylene	156-60-5	-	X	X	X
bromodichloromethane	75-27-4	X	X	X	X
Carbon tetrachloride	56-23-5	X	X	X	X
bromoform	75-25-2	X	X	X	X
1,1-Dichloroethylene	75-35-4	X	X	X	X
Trichloroethene	79-01-6	X	X	X	X
2,2-dichloropropane	594-20-7	-	X	-	-
trans-1,3-Dichloropropylene	10061-02-6	X	X	-	-
1,3-dichloropropane	142-28-9	-	X	X	X
1,1-dichloroethane	75-34-3	X	X	X	X
Dichloromethane	75-09-2	X	X	X	X
cis-1,3-Dichloropropene	10061-01-5	-	X	X	-
1,1,1-Trichloroethane	71-55-6	X	X	X	X
chloroform	67-66-3	X	X	X	X

16. OTHER INFORMATION

Prior Version Date: 02/29/12

Disclaimer: Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding prodcuts described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.

Safety Data Sheet

Revision Date: 08/07/13
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**30044, 30044-5XX, & 30144 / 502.2 Calibration Mix #3**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Revision Number:	6
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Flammable Liquid Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Inhalation Vapour Category 3
Acute Toxicity - Inhalation Gas Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

GHS Signal Word:

Danger

GHS Hazard:

Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled.
Toxic if inhaled.
Causes damage to organs.

GHS Precautions:

Safety Precautions:

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do no eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment see section 4.
Specific measures see section 4.

	Rinse mouth. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. In case of fire: Use extinguishing media in section 5 for extinction.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal:	Dispose of contents/container according to section 13 of the SDS.
Single Exposure Target Organs:	No data available.
Repeated Exposure Target Organs:	No data available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	97.200000
1,2-dibromo-3-chloropropane	96-12-8	202-479-3	0.200000
dibromomethane	74-95-3	200-824-2	0.200000
bromochloromethane	74-97-5		0.200000
Tetrachloroethylene	127-18-4	204-825-9	0.200000
1,1,2-trichloroethane	79-00-5	201-166-9	0.200000
1,2-dibromoethane	106-93-4	203-444-5	0.200000
1,2-dichloropropane	78-87-5	201-152-2	0.200000
1,2-dichloroethane	107-06-2	203-458-1	0.200000
1,1,1,2-tetrachloroethane	630-20-6		0.200000
cis-1,2-dichloroethylene	156-59-2	205-860-2 205-859-7 205-860-2 205-859-7 208-750-2	0.200000
1,2,3-trichloropropane	96-18-4	202-486-1	0.200000
1,1,2,2-tetrachloroethane	79-34-5	201-197-8	0.200000
chlorodibromomethane	124-48-1		0.200000
1,1-dichloropropene	563-58-6	209-253-3	0.200000

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately

Eyes: Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.

Skin Contact: Wash with soap and water. Remove contaminated clothing, launder immediately, and discard contaminated leather goods. Get medical attention immediately.

Ingestion: Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
1,2-dibromo-3-chloropropane	96-12-8	ND		No TLV	1 ppb TWA
dibromomethane	74-95-3	ND		No TLV	No data available.
bromochloromethane	74-97-5	ND		200 ppm TWA	200 ppm TWA; 1050 mg/m3 TWA
Tetrachloroethylene	127-18-4	150 ppm IDLH	100 ppm STEL 100 ppm STEL; 685 mg/m3 STEL	25 ppm TWA 25 ppm TWA; 170 mg/m3 TWA	100 ppm TWA; C 200 ppm
1,1,2-trichloroethane	79-00-5	ND		10 ppm TWA	10 ppm TWA; 45 mg/m3 TWA
1,2-dibromoethane	106-93-4	100 ppm IDLH		No TLV	20 ppm TWA
1,2-dichloropropane	78-87-5	ND		10 ppm TWA	75 ppm TWA; 350 mg/m3

				TWA
1,2-dichloroethane	107-06-2	50 ppm IDLH	10 ppm TWA	50 ppm TWA
1,1,1,2-tetrachloroethane	630-20-6	ND	No TLV	No data available.
cis-1,2-dichloroethylene	156-59-2	ND	200 ppm TWA	No data available.
1,2,3-trichloropropane	96-18-4	100 ppm IDLH	10 ppm TWA	50 ppm TWA; 300 mg/m3 TWA
1,1,2,2-tetrachloroethane	79-34-5	ND	1 ppm TWA	5 ppm TWA; 35 mg/m3 TWA
chlorodibromomethane	124-48-1	ND	No TLV	No data available.
1,1-dichloropropene	563-58-6	ND	No TLV	No data available.

Personal Protection:

Engineering Measures: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color: No data available.
Odor: Mild
Physical State: No data available.
pH: No data available.
Vapor Density: 1.1 (air = 1)
Melting Point: -98 ℃
Flash Point: 52
Flammability: Highly Flammable
Upper Flammable/Explosive Limit, % in air: 36.0
Lower Flammable/Explosive Limit, % in air: 6.0
Autoignition Temperature: 464 deg C
Decomposition Temperature: No data available.
Specific Gravity: 0.791 - 0.792 g/cm3 at 20 ℃
Evaporation Rate: No data available.
Odor Threshold: No data available.
Solubility: Moderate; 50-99%
Partition Coefficient: n-octanol in water: No data available.
VOC % by weight: 97.20
Molecular Weight: 32.04

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.
Conditions to Avoid: No data available.
Materials to Avoid / Chemical Incompatiability: Strong oxidizing agents
Hazardous Decomposition Products: Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure: Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity: None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

Inhalation Toxicity: Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause

central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.

Skin Contact: Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Eye Contact: Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

Ingestion Irritation: Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.

Ingestion Toxicity: Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains a probable or known human carcinogen.

Reproductive and Developmental Toxicity: Contains a known human reproductive and/or developmental hazard.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Toxic! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs).

Skin Contact: Upon prolonged or repeated contact can cause severe irritation, defatting, and dermatitis. May cause lingering affects but not likely to result in permanent damage if the exposure is eliminated.

Skin Absorption: Upon prolonged or repeated exposure, no hazard in normal industrial use.

Ingestion: Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 83.2 mg/L 4 h; Oral LD50 Rat 5628 mg/kg
1,2-Dibromo-3-chloropropane	96-12-8	Inhalation LC50 Rat 103 ppm 8 h
Ethylene, tetrachloro-	127-18-4	Inhalation LC50 Rat : 34200 mg/m3/8H; Inhalation LC50 Mouse : 5200 ppm/4H; Oral LD50 Rat : 2629 mg/kg; Oral LD50 Mouse : 8100 mg/kg
Ethane, 1,2-dibromo-	106-93-4	Oral LD50 Rat 108 mg/kg; Dermal LD50 Rabbit 300 mg/kg
Ethane, 1,2-dichloro-	107-06-2	Dermal LD50 Rabbit 2800 mg/kg; Oral LD50 Rat 625 mg/kg; Inhalation LC50 Rat 1000 ppm 7 h
Propane, 1,2,3-trichloro-	96-18-4	Oral LD50 Rat 125 mg/kg; Dermal LD50 Rabbit 250 mg/kg

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.	
1,2-Dibromo-3-chloropropane	96-12-8	Present
Tetrachloroethylene	127-18-4	Present
1,2-Dibromoethane	106-93-4	Present
1,2-Dichloroethane	107-06-2	Present
1,2,3-Trichloropropane	96-18-4	Present

ACGIH:

Chemical Name	CAS No.	
Tetrachloroethylene	127-18-4	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans A3-animal carcinogen
Ethylene dibromide	106-93-4	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Ethylene dichloride	107-06-2	A4 - Not Classifiable as a Human

1,2,3-Trichloropropane	96-18-4	Carcinogen A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

NIOSH:

Chemical Name	CAS No.	
1,2-Dibromo-3-chloropropane	96-12-8	potential occupational carcinogen
Tetrachloroethylene	127-18-4	potential occupational carcinogen
Ethylene dibromide	106-93-4	potential occupational carcinogen
Ethylene dichloride	107-06-2	potential occupational carcinogen
1,2,3-Trichloropropane	96-18-4	potential occupational carcinogen

NTP:

Chemical Name	CAS No.
No data available.	

IARC:

Chemical Name	CAS No.	Group No.
No data.		Group 1
Monograph 63; 1995	127-18-4	Group 2A
Ethylene dibromide	106-93-4	Group 2A
1,2,3-Trichloropropane	96-18-4	Group 2A
1,2-Dibromo-3-chloropropane	96-12-8	Group 2B
1,2-Dichloroethane	107-06-2	Group 2B
1,1,1,2-Tetrachloroethane	630-20-6	Group 2B
1,1,2,2-Tetrachloroethane	79-34-5	Group 2B

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility: No data
Persistence: No data
Bioaccumulation: No data
Degradability: Biodegrades slowly.
Ecological Toxicity Data: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product: Spent or discarded material is a hazardous waste.
Disposal Methods: Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging: Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:
DOT Proper Shipping Name: Flammable liquids, toxic, n.o.s. (Methanol, Tetrachloroethylene)
UN Number: UN1992
Hazard Class: 3(6.1)
Packing Group: II

International:
IATA Proper Shipping Name: Flammable liquids, toxic, n.o.s. (Methanol, Tetrachloroethylene)
UN Number: UN1992
Hazard Class: 3 (6.1)
Packing Group: II

Marine Pollutant: No

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
1,2-dibromo-3-chloropropane	96-12-8	X	X	-	X
dibromomethane	74-95-3	X	X	-	X
bromochloromethane	74-97-5	-	-	-	X
Tetrachloroethylene	127-18-4	X	X	-	X

1,1,2-trichloroethane	79-00-5	X	X	-	X
1,2-dibromoethane	106-93-4	X	X	-	X
1,2-dichloropropane	78-87-5	X	X	-	X
1,2-dichloroethane	107-06-2	X	X	-	X
1,1,1,2-tetrachloroethane	630-20-6	X	X	-	X
cis-1,2-dichloroethylene	156-59-2	X	-	-	X
1,2,3-trichloropropane	96-18-4	-	X	-	X
1,1,2,2-tetrachloroethane	79-34-5	X	X	-	X
chlorodibromomethane	124-48-1	X	-	-	X
1,1-dichloropropene	563-58-6	-	-	-	-

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
1,2-Dibromo-3-chloropropane	96-12-8	Prop 65 Cancer
Tetrachloroethylene	127-18-4	Prop 65 Cancer
Tetrachloroethylene (Perchloroethylene)		
Vinyl trichloride	79-00-5	Prop 65 Cancer
Ethylene dibromide	106-93-4	Prop 65 Cancer
1,2-Dichloropropane	78-87-5	Prop 65 Cancer
Ethylene dichloride	107-06-2	Prop 65 Cancer
1,2,3-Trichloropropane	96-18-4	Prop 65 Cancer
1,1,2,2-Tetrachloroethane	79-34-5	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox
Ethylene dibromide	106-93-4	Prop 65 Devolop Tox
1,2-Dibromo-3-chloropropane	96-12-8	Prop 65 Rep Male
Ethylene dibromide	106-93-4	Prop 65 Rep Male

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
1,2-dibromo-3-chloropropane	96-12-8	X	X	X	X
dibromomethane	74-95-3	X	X	X	-
bromochloromethane	74-97-5	X	X	X	X
Tetrachloroethylene	127-18-4	X	X	X	X
1,1,2-trichloroethane	79-00-5	X	X	X	X
1,2-dibromoethane	106-93-4	X	X	X	X
1,2-dichloropropane	78-87-5	X	X	X	X
1,2-dichloroethane	107-06-2	X	X	X	X
1,1,1,2-tetrachloroethane	630-20-6	X	X	X	X
cis-1,2-dichloroethylene	156-59-2	-	X	X	-
1,2,3-trichloropropane	96-18-4	X	X	X	X
1,1,2,2-tetrachloroethane	79-34-5	X	X	X	X
chlorodibromomethane	124-48-1	X	X	X	X
1,1-dichloropropene	563-58-6	-	X	-	-

16. OTHER INFORMATION

Prior Version Date: 02/01/12

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Safety Data Sheet

Revision Date: 08/07/13
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**30045, 30045-5XX, & 30145 / 502.2 Calibration Mix #4**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Revision Number:	8
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Flammable Liquid Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Inhalation Vapour Category 3
Acute Toxicity - Inhalation Gas Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

GHS Signal Word:

Danger

GHS Hazard:

Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled.
Toxic if inhaled.
Causes damage to organs.

GHS Precautions:

Safety Precautions:

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do no eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment see section 4.
Specific measures see section 4.

	Rinse mouth. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. In case of fire: Use extinguishing media in section 5 for extinction.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal:	Dispose of contents/container according to section 13 of the SDS.
Single Exposure Target Organs:	No data available.
Repeated Exposure Target Organs:	No data available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	98.200000
m-xylene	108-38-3	215-535-7 203-576-3 203-396-5 215-535-7 203-396-5 203-576-3 202-422-2	0.200000
Toluene	108-88-3	203-625-9	0.200000
Benzene	71-43-2	200-753-7	0.200000
Styrene	100-42-5	202-851-5	0.200000
Propylbenzene/ Methyldimethoxysilane			0.200000
tert-butylbenzene	98-06-6		0.200000
chlorobenzene	108-90-7	203-628-5	0.200000
mesitylene	108-67-8	203-604-4	0.200000
isopropylbenzene (cumene)	98-82-8	203-132-9 202-704-5 203-132-9	0.200000

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately
Eyes:	Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water spray or fog may also be effective for extinguishing if swept across the base of the fire. Water can also be used to absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards: Vapors may be ignited by heat, sparks, flames or other sources of ignition at or above the low flash point giving rise to a Class B fire. Vapors are heavier than air and may travel to a source of ignition and flash back

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained toxic breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface. Use water spray/fog for cooling.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition Keep away from heat, sparks, and flame

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
m-xylene	108-38-3	ND	150 ppm STEL	100 ppm TWA	No data available.
Toluene	108-88-3	ND		20 ppm TWA 50 ppm TWA; 188 mg/m3 TWA	200 ppm TWA; C 300 ppm
Benzene	71-43-2	500 ppm IDLH	2.5 ppm STEL 2.5 ppm STEL; 8 mg/m3 STEL	0.5 ppm TWA 0.5 ppm TWA; 1.6 mg/m3 TWA	10 ppm TWA (apply only to exempt industry segments)
Styrene	100-42-5	700 ppm IDLH	40 ppm STEL 40 ppm STEL; 170 mg/m3 STEL	20 ppm TWA 20 ppm TWA; 85 mg/m3 TWA	100 ppm TWA; C 200 ppm
Propylbenzene/ Methyldimethoxysilane		ND		No TLV	No data available.
tert-butylbenzene	98-06-6	ND		No TLV	No data available.
chlorobenzene	108-90-7	ND		10 ppm TWA	75 ppm TWA; 350 mg/m3 TWA
mesitylene	108-67-8	ND		No TLV	No data available.
isopropylbenzene (cumene)	98-82-8	ND		50 ppm TWA	50 ppm TWA; 245 mg/m3 TWA

Personal Protection:

Engineering Measures:	Local exhaust ventilation is recommended when generating excessive levels of vapors from handling or thermal processing.
Respiratory Protection:	Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.
Eye Protection:	Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.
Skin Protection:	Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	No data available.
Odor:	Mild
Physical State:	No data available.
pH:	No data available.
Vapor Density:	1.1 (air = 1)
Melting Point:	-98 ℃
Flash Point:	12
Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36.0
Lower Flammable/Explosive Limit, % in air:	6.0
Autoignition Temperature:	464 deg C
Decomposition Temperature:	No data available.
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 ℃
Evaporation Rate:	No data available.
Odor Threshold:	ND
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	No data available.
VOC % by weight:	98.40
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	None known.
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents Peroxides Strong acids
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.

Ingestion Toxicity: Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity: Contains a probable or known human carcinogen.

Reproductive and Developmental Toxicity: Contains a known human reproductive and/or developmental hazard.

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)

Skin Contact: Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Skin Absorption: Upon prolonged or repeated exposure, toxic if absorbed through the skin. Likely to cause systemic damage.

Ingestion: Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 83.2 mg/L 4 h; Oral LD50 Rat 5628 mg/kg
Benzene	71-43-2	Inhalation LC50 Rat 13050 - 14380 ppm 4 h
Styrene	100-42-5	Inhalation LC50 Rat : 12 gm/m3/4H; Inhalation LC50 Mouse : 9500 mg/m3/4H; Oral LD50 Rat : 2650 mg/kg; Oral LD50 Mouse : 316 mg/kg

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.	
Benzene	71-43-2	Monograph 29, Supplement 7; 1987; {IARC - Group 1 (carcinogenic to humans)}; Known Carcinogen; {NTP Eighth Report - Known Carcinogens}; 1 ppm TWA; 5 ppm STEL; 0.5 ppm TWA action limit; Cancer hazard; Flammable (see 29 CFR 1910.1028); {OSHA - 29 CFR 1910 Specifically Regulated Chemicals}
Styrene	100-42-5	Present

ACGIH:

Chemical Name	CAS No.	
Benzene	71-43-2	A1 - Confirmed Human Carcinogen A1-confirmed human carcinogen
Styrene, monomer	100-42-5	A4 - Not Classifiable as a Human Carcinogen

NIOSH:

Chemical Name	CAS No.	
Benzene	71-43-2	potential occupational carcinogen

NTP:

Chemical Name	CAS No.	
Benzene	71-43-2	Known Carcinogen

IARC:

Chemical Name	CAS No.	Group No.
Monograph 29, Supplement 7; 1987	71-43-2	Group 1
No data.		Group 2A
Styrene	100-42-5	Group 2B
Monograph 60; 1994 (Overall evaluation upgraded from 3 to 2B with supporting evidence from other data		

relevant to the evaluation of
carcinogenicity and its mechanisms)

12. ECOLOGICAL INFORMATION

Overview:	Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility:	No data
Persistence:	No data
Bioaccumulation:	No data
Degradability:	Biodegrades slowly.
Ecological Toxicity Data:	No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:	Spent or discarded material is a hazardous waste.
Disposal Methods:	Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging:	Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:	
DOT Proper Shipping Name:	Flammable liquids, n.o.s. (Methanol, Benzene)
UN Number:	UN1993
Hazard Class:	3
Packing Group:	II
International:	
IATA Proper Shipping Name:	Flammable liquids, n.o.s. (Methanol, Benzene)
UN Number:	UN1993
Hazard Class:	3
Packing Group:	II
Marine Pollutant:	No

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
m-xylene	108-38-3	X	X	-	X
Toluene	108-88-3	X	X	-	X
Benzene	71-43-2	X	X	-	X
Styrene	100-42-5	X	X	-	X
Propylbenzene/ Methyldimethoxysilane					
tert-butylbenzene	98-06-6	-	-	-	X
chlorobenzene	108-90-7	X	X	-	X
mesitylene	108-67-8	-	-	-	X
isopropylbenzene (cumene)	98-82-8	X	X	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Benzene	71-43-2	Prop 65 Cancer
Cumene	98-82-8	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox
Toluene	108-88-3	Prop 65 Devolop Tox
Benzene	71-43-2	Prop 65 Devolop Tox
Toluene	108-88-3	Prop 65 Rep Female
Benzene	71-43-2	Prop 65 Rep Male

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
m-xylene	108-38-3	X	X	X	X
Toluene	108-88-3	X	X	X	X
Benzene	71-43-2	X	X	X	X
Styrene	100-42-5	X	X	X	X
Propylbenzene/ Methyldimethoxysilane					
tert-butylbenzene	98-06-6	X	X	X	-

chlorobenzene	108-90-7	X	X	X	X
mesitylene	108-67-8	-	X	-	X
isopropylbenzene (cumene)	98-82-8	X	X	X	X

16. OTHER INFORMATION

Prior Version Date: 02/09/12

Disclaimer: Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding prodcuts described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.

Safety Data Sheet

Revision Date: 08/07/13
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**30046, 30046-5XX, & 30146 / 502.2 Calibration Mix #5**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Revision Number:	7
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Flammable Liquid Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Inhalation Vapour Category 3
Acute Toxicity - Inhalation Gas Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

GHS Signal Word:

Danger

GHS Hazard:

Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled.
Toxic if inhaled.
Causes damage to organs.

GHS Precautions:

Safety Precautions:

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do no eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment see section 4.
Specific measures see section 4.

Rinse mouth.
Remove/Take off immediately all contaminated clothing.
Wash contaminated clothing before reuse.
In case of fire: Use extinguishing media in section 5 for extinction.

Storage: Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal: Dispose of contents/container according to section 13 of the SDS.

Single Exposure Target Organs: No data available.

Repeated Exposure Target Organs: No data available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	98.000000
p-xylene	106-42-3	215-535-7 203-576-3 203-396-5 215-535-7 203-396-5 203-576-3 202-422-2	0.200000
o-xylene	95-47-6	215-535-7 203-576-3 203-396-5 215-535-7 203-396-5 203-576-3 202-422-2	0.200000
butylbenzene	104-51-8		0.200000
bromobenzene	108-86-1	203-623-8	0.200000
sec-butylbenzene	135-98-8		0.200000
1,2,4-trimethylbenzene	95-63-6	202-436-9	0.200000
2-chlorotoluene	95-49-8	246-698-2 203-397-0 203-580-5	0.200000

		246-698-2 203-397-0 202-424-3 203-580-5	
1,3-Dichlorobenzene	541-73-1	208-792-1	0.200000
Ethylbenzene	100-41-4	202-849-4	0.200000
1,2,4-trichlorobenzene	120-82-1	204-428-0	0.200000

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately

Eyes: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition Keep away from heat, sparks, and flame

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
p-xylene	106-42-3	ND	150 ppm STEL	100 ppm TWA	No data available.
o-xylene	95-47-6	ND	150 ppm STEL	100 ppm TWA	No data available.
butylbenzene	104-51-8	ND		No TLV	No data available.
bromobenzene	108-86-1	ND		No TLV	No data available.
sec-butylbenzene	135-98-8	ND		No TLV	No data available.
1,2,4-trimethylbenzene	95-63-6	ND		No TLV	No data available.
2-chlorotoluene	95-49-8	ND		50 ppm TWA	No data available.
1,3-Dichlorobenzene	541-73-1	ND		No TLV	No PEL established
Ethylbenzene	100-41-4	800 ppm IDLH	125 ppm STEL; 543 mg/m3 STEL	20 ppm TWA 100 ppm TWA; 434 mg/m3 TWA	100 ppm TWA; 435 mg/m3 TWA
1,2,4-trichlorobenzene	120-82-1	ND		No TLV	No data available.

Personal Protection:

Engineering Measures: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color: No data available.
Odor: Mild
Physical State: No data available.
pH: No data available.
Vapor Density: 1.1 (air = 1)
Melting Point: -98 ℃
Flash Point: 52
Flammability: Highly Flammable
Upper Flammable/Explosive Limit, % in air: 36.0
Lower Flammable/Explosive Limit, % in air: 6.0
Autoignition Temperature: 464 deg C
Decomposition Temperature: No data available.
Specific Gravity: 0.791 - 0.792 g/cm3 at 20 ℃
Evaporation Rate: No data available.
Odor Threshold: ND
Solubility: Moderate; 50-99%
Partition Coefficient: n-octanol in water: No data available.
VOC % by weight: 98.00
Molecular Weight: 32.04

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.
Conditions to Avoid: None known.
Materials to Avoid / Chemical Incompatiability: Strong oxidizing agents
Hazardous Decomposition Products: Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure: Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity: None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	Contains a probable or known human carcinogen.
Reproductive and Developmental Toxicity:	Contains a known human reproductive and/or developmental hazard.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Ingestion:	Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 83.2 mg/L 4 h; Oral LD50 Rat 5628 mg/kg
Benzene, ethyl-	100-41-4	Oral LD50 Rat : 3500 mg/kg; Dermal LD50 Rabbit : 17800 uL/kg

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.	
Ethylbenzene	100-41-4	Present

ACGIH:

Chemical Name	CAS No.	
Ethyl benzene	100-41-4	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

NIOSH:

Chemical Name	CAS No.
No data available.	

NTP:

Chemical Name	CAS No.
No data available.	

IARC:

Chemical Name	CAS No.	Group No.
No data.		Group 1
No data.		Group 2A
Ethylbenzene	100-41-4	Group 2B

12. ECOLOGICAL INFORMATION

Overview:	Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility:	No data

Persistence: No data
Bioaccumulation: No data
Degradability: Biodegrades slowly.
Ecological Toxicity Data: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product: Spent or discarded material is a hazardous waste.
Disposal Methods: Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging: Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:
DOT Proper Shipping Name: Flammable liquids, n.o.s. (Methanol, Ethylbenzene)
UN Number: UN1993
Hazard Class: 3
Packing Group: II

International:
IATA Proper Shipping Name: Flammable liquids, n.o.s. (Methanol, Ethylbenzene)
UN Number: UN1993
Hazard Class: 3
Packing Group: II

Marine Pollutant: No

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
p-xylene	106-42-3	X	X	-	X
o-xylene	95-47-6	X	X	-	X
butylbenzene	104-51-8	-	-	-	X
bromobenzene	108-86-1	-	-	-	X
sec-butylbenzene	135-98-8	-	-	-	X
1,2,4-trimethylbenzene	95-63-6	-	X	-	X
2-chlorotoluene	95-49-8	-	-	-	X
1,3-Dichlorobenzene	541-73-1	X	X	-	X
Ethylbenzene	100-41-4	X	X	-	X
1,2,4-trichlorobenzene	120-82-1	X	X	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Ethyl benzene	100-41-4	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
p-xylene	106-42-3	X	X	X	X
o-xylene	95-47-6	X	X	X	X
butylbenzene	104-51-8	X	-	X	-
bromobenzene	108-86-1	X	X	X	-
sec-butylbenzene	135-98-8	-	X	X	-
1,2,4-trimethylbenzene	95-63-6	X	X	X	-
2-chlorotoluene	95-49-8	X	X	X	X
1,3-Dichlorobenzene	541-73-1	X	X	X	X
Ethylbenzene	100-41-4	X	X	X	X
1,2,4-trichlorobenzene	120-82-1	X	X	X	X

16. OTHER INFORMATION

Prior Version Date: 02/29/12
Disclaimer: Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose

prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding prodcuts described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.

Safety Data Sheet

Revision Date: 08/07/13
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**30047, 30047-5XX, & 30147 / 502.2 Calibration Mix #6**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Revision Number:	6
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Flammable Liquid Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Inhalation Vapour Category 3
Acute Toxicity - Inhalation Gas Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

GHS Signal Word:

Danger

GHS Hazard:

Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled.
Toxic if inhaled.
Causes damage to organs.

GHS Precautions:

Safety Precautions:

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do no eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment see section 4.
Specific measures see section 4.

	Rinse mouth. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. In case of fire: Use extinguishing media in section 5 for extinction.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal:	Dispose of contents/container according to section 13 of the SDS.
Single Exposure Target Organs:	No data available.
Repeated Exposure Target Organs:	No data available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	98.600000
Naphthalene	91-20-3	202-049-5	0.200000
1,2,3-trichlorobenzene	87-61-6		0.200000
1,4-dichlorobenzene	106-46-7	203-400-5	0.200000
1,2-Dichlorobenzene	95-50-1	202-425-9	0.200000
hexachloro-1,3-butadiene	87-68-3		0.200000
4-isopropyltoluene (p-cumene)	99-87-6		0.200000
1-chloro-4-methylbenzene	106-43-4	246-698-2 203-397-0 203-580-5 246-698-2 203-397-0 202-424-3 203-580-5	0.200000

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately
Eyes:	Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.
Skin Contact:	Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing

agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
Naphthalene	91-20-3	250 ppm IDLH	15 ppm STEL 15 ppm STEL; 79 mg/m3 STEL	10 ppm TWA 10 ppm TWA; 52 mg/m3 TWA	10 ppm TWA; 50 mg/m3 TWA
1,2,3-trichlorobenzene	87-61-6	ND		No TLV	No data available.
1,4-dichlorobenzene	106-46-7	150 ppm IDLH		10 ppm TWA	75 ppm TWA; 450 mg/m3 TWA
1,2-Dichlorobenzene	95-50-1	ND	50 ppm STEL 50 ppm STEL; 301 mg/m3 STEL	25 ppm TWA 25 ppm TWA; 150 mg/m3 TWA	No PEL established
hexachloro-1,3-butadiene	87-68-3	ND		0.02 ppm TWA	No data available.
4-isopropyltoluene (p-cumene)	99-87-6	ND		No TLV	No data available.
1-chloro-4-methylbenzene	106-43-4	ND		No TLV	No data available.

Personal Protection:

Engineering Measures: Local exhaust ventilation is recommended when generating excessive levels of vapors from handling or thermal processing.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other

exposed areas with mild soap and water before eating, drinking, and when leaving work

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	No data available.
Odor:	Mild
Physical State:	No data available.
pH:	No data available.
Vapor Density:	1.1 (air = 1)
Melting Point:	-98 ℃
Flash Point:	52
Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36.0
Lower Flammable/Explosive Limit, % in air:	6.0
Autoignition Temperature:	464 deg C
Decomposition Temperature:	No data available.
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 ℃
Evaporation Rate:	No data available.
Odor Threshold:	No data available.
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	No data available.
VOC % by weight:	98.60
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	No data available.
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	Contains a probable or known human carcinogen.
Reproductive and Developmental Toxicity:	Contains a known human reproductive and/or developmental hazard.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Ingestion:	Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 83.2 mg/L 4 h; Oral LD50 Rat 5628 mg/kg
Naphthalene	91-20-3	Inhalation LC50 Rat : >340 mg/m3/1H; Oral LD50 Rat : 490 mg/kg; Oral LD50 Mouse : 533 mg/kg; Dermal LD50 Rabbit : >20 gm/kg

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.	
Naphthalene	91-20-3	Present
1,4-Dichlorobenzene	106-46-7	Present

ACGIH:

Chemical Name	CAS No.	
Naphthalene	91-20-3	A4 - Not Classifiable as a Human Carcinogen
p-Dichlorobenzene	106-46-7	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

NIOSH:

Chemical Name	CAS No.	
p-Dichlorobenzene	106-46-7	potential occupational carcinogen

NTP:

Chemical Name	CAS No.
No data available.	

IARC:

Chemical Name	CAS No.	Group No.
No data.		Group 1
No data.		Group 2A
Naphthalene	91-20-3	Group 2B
para-Dichlorobenzene	106-46-7	Group 2B

12. ECOLOGICAL INFORMATION

Overview:	Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility:	No data
Persistence:	No data
Bioaccumulation:	No data
Degradability:	Biodegrades slowly.
Ecological Toxicity Data:	No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:	Spent or discarded material is a hazardous waste.
Disposal Methods:	Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging:	Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:	Methanol
UN Number:	UN1230
Hazard Class:	3
Packing Group:	II

International:

IATA Proper Shipping Name:	Methanol
UN Number:	UN1230
Hazard Class:	3 (6.1)

Packing Group: II

Marine Pollutant: No

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
Naphthalene	91-20-3	X	X	-	X
1,2,3-trichlorobenzene	87-61-6	-	-	-	X
1,4-dichlorobenzene	106-46-7	X	X	-	X
1,2-Dichlorobenzene	95-50-1	X	X	-	X
hexachloro-1,3-butadiene	87-68-3	X	X	-	X
4-isopropyltoluene (p-cumene)	99-87-6	-	-	-	X
1-chloro-4-methylbenzene	106-43-4	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Naphthalene	91-20-3	Prop 65 Cancer
p-Dichlorobenzene	106-46-7	Prop 65 Cancer
Hexachlorobutadiene	87-68-3	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
Naphthalene	91-20-3	X	X	X	X
1,2,3-trichlorobenzene	87-61-6	-	X	-	-
1,4-dichlorobenzene	106-46-7	X	X	X	X
1,2-Dichlorobenzene	95-50-1	X	X	X	X
hexachloro-1,3-butadiene	87-68-3	X	X	X	X
4-isopropyltoluene (p-cumene)	99-87-6	-	X	X	-
1-chloro-4-methylbenzene	106-43-4	-	X	X	-

16. OTHER INFORMATION

Prior Version Date: 02/01/12

Disclaimer: Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding prodcuts described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.

Safety Data Sheet

Revision Date: 02/18/13
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**30201, 30201-5XX, & 30301 / 524 Internal**
Company:	**Standard/Surrogate Mix**
Address:	Restek Corporation 110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-356-1688
Revision Number:	8
Intended use:	For Laboratory use only

2. HAZARD(S)INDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Flammable Liquid Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Inhalation Vapour Category 3
Acute Toxicity - Inhalation Gas Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3
Flame
Skull and crossbones
Health Hazard

GHS Signal Word: Danger

GHS Hazard:

H225 - Highly flammable liquid and vapour.
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled.
H331 - Toxic if inhaled.
H370 - Causes damage to organs.

GHS Precautions:

Safety Precautions:

P210 - Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating and lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash hands and skin thoroughly after handling.
P270 - Do no eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in

a position comfortable for breathing.
P307+P311 - IF exposed: Call a POISON CENTER or doctor/physician.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P321 - Specific treatment see section 4.
P322 - Specific measures see section 4.
P330 - Rinse mouth.
P361 - Remove/Take off immediately all contaminated clothing.
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use extinguishing media in section 5 for extinction.

Storage: P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.

Disposal: P501 - Dispose of contents/container according to section 13 of the SDS.

Single Exposure Target Organs: No data available.

Repeated Exposure Target Organs: No data available.

Physical Hazards: F - Highly flammable
Health Hazards: T - Toxic

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	99.400000
fluorobenzene	462-06-6		0.200000
1,2-dichlorobenzene-d4	2199-69-1		0.200000
1-bromo-4-fluorobenzene	460-00-4		0.200000

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately

Eyes: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
fluorobenzene	462-06-6	ND		No TLV	No data available.
1,2-dichlorobenzene-d4	2199-69-1	ND		No TLV	No data available.
1-bromo-4-fluorobenzene	460-00-4	ND		No TLV	No data available.

United Kingdom:

Chemical Name	CAS No.	EINEC No.	WEL-STEL	WEL-TWA
methanol	67-56-1	200-659-6	250 ppm STEL; 333 mg/m3 STEL	200 ppm TWA; 266 mg/m3 TWA
fluorobenzene	462-06-6		No data available.	No data available.
1,2-dichlorobenzene-d4	2199-69-1		No data available.	No data available.
1-bromo-4-fluorobenzene	460-00-4		No data available.	No data available.

Personal Protection:

Engineering Measures: Local exhaust ventilation is recommended when generating excessive levels of vapors from handling or thermal processing.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:	Mild
pH:	No data available.
Vapor Density:	1.1 (air = 1)
Melting Point:	-98 ℃
Flash Point:	52
Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36.0
Lower Flammable/Explosive Limit, % in air:	6.0
Autoignition Temperature:	464 deg C
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 ℃

Evaporation Rate:	No data available.
Odor Threshold:	No data available.
Solubility:	Moderate; 50-99%
VOC % by weight:	99.40
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	No data.
Reproductive and Developmental Toxicity:	Contains a known human reproductive and/or developmental hazard.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Ingestion:	Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 83.2 mg/L 4 h; Inhalation LC50 Rat 64000 ppm 4 h; Oral LD50 Rat 5628 mg/kg; Dermal LD50 Rabbit 15800 mg/kg

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.
No data available.	

ACGIH:

Chemical Name	CAS No.
No data available.	

NIOSH:

Chemical Name	CAS No.
No data available.	

NTP:

Chemical Name	CAS No.
No data available.	

IARC:

Chemical Name	CAS No.	Group No.
No data.		Group 1
No data.		Group 2A
No data.		Group 2B

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility: No data
Persistence: No data
Bioaccumulation: No data
Degradability: Biodegrades slowly.
Ecological Toxicity Data: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product: Spent or discarded material is a hazardous waste.
Disposal Methods: Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging: Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:
DOT Proper Shipping Name: Methanol
UN Number: UN1230
Hazard Class: 3
Packing Group: II

International:
IATA Proper Shipping Name: Methanol
UN Number: UN1230
Hazard Class: 3 (6.1)
Packing Group: II

Marine Pollutant: No

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
fluorobenzene	462-06-6	-	-	-	X
1,2-dichlorobenzene-d4	2199-69-1	-	-	-	-
1-bromo-4-fluorobenzene	460-00-4	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Methanol	67-56-1	Prop 65 Devolop Tox

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
fluorobenzene	462-06-6	X	X	X	-
1,2-dichlorobenzene-d4	2199-69-1	-	-	-	-
1-bromo-4-fluorobenzene	460-00-4	-	-	-	-

EU Directives Classification:
Hazard Symbols:

Risk Phrases: R23/25 - Toxic by inhalation and if swallowed
R11 - Highly flammable

Safety Phrases: S1/2:Keep locked up and out of the reach of children
S7:Keep container tightly closed
S16:Keep away from sources of ignition - No smoking
S36/37:Wear suitable protective clothing and gloves
S45:In case of accident or if you feel unwell, seek medical advice immediately

16. OTHER INFORMATION

Prior Version Date: 02/19/10

Disclaimer: Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding prodcuts described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.

Safety Data Sheet

Revision Date: 08/07/13
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**30203, 30203-5XX, & 30303 / 524 Calibration Mix #8**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Revision Number:	7
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Flammable Liquid Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Inhalation Vapour Category 3
Acute Toxicity - Inhalation Gas Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

GHS Signal Word:

Danger

GHS Hazard:

Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled.
Toxic if inhaled.
Causes damage to organs.

GHS Precautions:

Safety Precautions:

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do no eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment see section 4.
Specific measures see section 4.

	Rinse mouth. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. In case of fire: Use extinguishing media in section 5 for extinction.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal:	Dispose of contents/container according to section 13 of the SDS.
Single Exposure Target Organs:	No data available.
Repeated Exposure Target Organs:	No data available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	97.600000
trans-1,4-dichloro-2-butene	110-57-6		0.200000
2-nitropropane	79-46-9	201-209-1	0.200000
1-chlorobutane	109-69-3	203-696-6	0.200000
methacrylonitrile	126-98-7	204-817-5	0.200000
methyl-tert-butyl ether	1634-04-4	216-653-1	0.200000
carbon disulfide	75-15-0	200-843-6	0.200000
hexachloroethane	67-72-1		0.200000
iodomethane	74-88-4	200-819-5	0.200000
propionitrile	107-12-0		0.200000
1,1-dichloroacetone	513-88-2		0.200000
diethyl ether	60-29-7	200-467-2	0.200000
chloroacetonitrile	107-14-2	203-467-0	0.200000

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately
Eyes:	Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.
Skin Contact:	Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
trans-1,4-dichloro-2-butene	110-57-6	ND		No TLV	No data available.
2-nitropropane	79-46-9	100 ppm IDLH		10 ppm TWA	25 ppm TWA; 90 mg/m3 TWA
1-chlorobutane	109-69-3	ND		No TLV	No data available.
methacrylonitrile	126-98-7	ND		1 ppm TWA	No data available.
methyl-tert-butyl ether	1634-04-4	ND		50 ppm TWA	No data available.
carbon disulfide	75-15-0	ND		1 ppm TWA	20 ppm TWA
hexachloroethane	67-72-1	300 ppm IDLH		1 ppm TWA	1 ppm TWA; 10 mg/m3 TWA
iodomethane	74-88-4	ND		2 ppm TWA	5 ppm TWA; 28 mg/m3 TWA
propionitrile	107-12-0	ND		No TLV	No data available.
1,1-dichloroacetone	513-88-2	ND		No TLV	No data available.
diethyl ether	60-29-7	ND	500 ppm STEL	400 ppm TWA	400 ppm TWA; 1200 mg/m3 TWA
chloroacetonitrile	107-14-2	ND		No TLV	No data available.

Personal Protection:

Engineering Measures: Local exhaust ventilation is recommended when generating excessive levels of vapors from handling or thermal processing.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3,

	provide respiratory protection.
Eye Protection:	Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.
Skin Protection:	Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	No data available.
Odor:	Mild
Physical State:	No data available.
pH:	No data available.
Vapor Density:	1.1 (air = 1)
Melting Point:	-98 ℃
Flash Point:	52
Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36.0
Lower Flammable/Explosive Limit, % in air:	6.0
Autoignition Temperature:	464 deg C
Decomposition Temperature:	No data available.
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 ℃
Evaporation Rate:	No data available.
Odor Threshold:	No data available.
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	No data available.
VOC % by weight:	97.60
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	No data available.
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	Contains a probable or known human carcinogen.
Reproductive and Developmental Toxicity:	Contains a known human reproductive and/or developmental hazard.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)
Skin Contact:	Upon prolonged or repeated contact, can cause

moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Ingestion: Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 83.2 mg/L 4 h; Oral LD50 Rat 5628 mg/kg
Propane, 2-nitro-	79-46-9	Inhalation LC50 Rat 13.25 mg/L 1 h; Oral LD50 Rat 168 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.	
2-Nitropropane	79-46-9	Present
Hexachloroethane	67-72-1	Present

ACGIH:

Chemical Name	CAS No.	
2-Nitropropane	79-46-9	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Hexachloroethane	67-72-1	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

NIOSH:

Chemical Name	CAS No.	
2-Nitropropane	79-46-9	potential occupational carcinogen
Hexachloroethane	67-72-1	potential occupational carcinogen

NTP:

Chemical Name	CAS No.
No data available.	

IARC:

Chemical Name	CAS No.	Group No.
No data.		Group 1
No data.		Group 2A
2-Nitropropane	79-46-9	Group 2B
Hexachloroethane	67-72-1	Group 2B

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.

Mobility: No data

Persistence: No data

Bioaccumulation: No data

Degradability: Biodegrades slowly.

Ecological Toxicity Data: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product: Spent or discarded material is a hazardous waste.

Disposal Methods: Dispose of by incineration following Federal, State, Local, or Provincial regulations.

Waste Disposal of Packaging: Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name: Flammable liquids, n.o.s. (Methanol, Methyl tert-butyl ether)

UN Number: UN1993

Hazard Class: 3

Packing Group: II

International:
IATA Proper Shipping Name: Flammable liquids, n.o.s. (Methanol, Methyl tert-butyl ether)
UN Number: UN1993
Hazard Class: 3
Packing Group: II

Marine Pollutant: No

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
trans-1,4-dichloro-2-butene	110-57-6	-	X	X	X
2-nitropropane	79-46-9	X	X	-	X
1-chlorobutane	109-69-3	-	-	-	X
methacrylonitrile	126-98-7	X	X	X	X
methyl-tert-butyl ether	1634-04-4	X	X	-	X
carbon disulfide	75-15-0	X	X	X	X
hexachloroethane	67-72-1	X	X	-	X
iodomethane	74-88-4	X	X	-	X
propionitrile	107-12-0	X	-	X	X
1,1-dichloroacetone	513-88-2	-	-	-	-
diethyl ether	60-29-7	X	-	-	X
chloroacetonitrile	107-14-2	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
2-Nitropropane	79-46-9	Prop 65 Cancer
Hexachloroethane	67-72-1	Prop 65 Cancer
Methyl iodide	74-88-4	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox
Carbon disulfide	75-15-0	Prop 65 Devolop Tox
Carbon disulfide	75-15-0	Prop 65 Rep Female
Carbon disulfide	75-15-0	Prop 65 Rep Male

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
trans-1,4-dichloro-2-butene	110-57-6	X	X	X	-
2-nitropropane	79-46-9	X	X	X	X
1-chlorobutane	109-69-3	X	X	X	-
methacrylonitrile	126-98-7	X	X	X	X
methyl-tert-butyl ether	1634-04-4	X	X	X	-
carbon disulfide	75-15-0	X	X	X	X
hexachloroethane	67-72-1	X	X	X	X
iodomethane	74-88-4	X	X	X	X
propionitrile	107-12-0	X	X	X	-
1,1-dichloroacetone	513-88-2	-	-	-	-
diethyl ether	60-29-7	X	X	X	X
chloroacetonitrile	107-14-2	X	-	-	-

16. OTHER INFORMATION

Prior Version Date: 09/20/10

Disclaimer: Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding prodcuts described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.

Safety Data Sheet

Revision Date: 08/07/13
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**30300 / 524 Calibration Mix #7A**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Revision Number:	4
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Flammable Liquid Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Inhalation Vapour Category 3
Acute Toxicity - Inhalation Gas Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

GHS Signal Word:

Danger

GHS Hazard:

Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled.
Toxic if inhaled.
Causes damage to organs.

GHS Precautions:

Safety Precautions:

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do no eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment see section 4.
Specific measures see section 4.

	Rinse mouth. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. In case of fire: Use extinguishing media in section 5 for extinction.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal:	Dispose of contents/container according to section 13 of the SDS.
Single Exposure Target Organs:	No data available.
Repeated Exposure Target Organs:	No data available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	89.100000
water	7732-18-5		9.900000
Acetone	67-64-1	200-662-2	0.200000
4-Methyl-2-pentanone	108-10-1	203-550-1	0.200000
Methyl ethyl ketone	78-93-3	201-159-0	0.200000
Tetrahydrofuran	109-99-9	203-726-8	0.200000
2-hexanone	591-78-6	209-731-1	0.200000

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately
Eyes:	Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.
Skin Contact:	Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.
Fire and/or Explosion Hazards:	Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
water	7732-18-5	ND		No TLV	No data available.
Acetone	67-64-1	ND	750 ppm STEL 750 ppm STEL; 1782 mg/m3 STEL	500 ppm TWA 500 ppm TWA; 1188 mg/m3 TWA	1000 ppm TWA; 2400 mg/m3 TWA
4-Methyl-2-pentanone	108-10-1	ND	75 ppm STEL 75 ppm STEL; 307 mg/m3 STEL	20 ppm TWA 50 ppm TWA; 205 mg/m3 TWA	100 ppm TWA; 410 mg/m3 TWA
Methyl ethyl ketone	78-93-3	ND	300 ppm STEL 300 ppm STEL; 885 mg/m3 STEL	200 ppm TWA 200 ppm TWA; 590 mg/m3 TWA	200 ppm TWA; 590 mg/m3 TWA
Tetrahydrofuran	109-99-9	ND	100 ppm STEL 250 ppm STEL; 737 mg/m3 STEL	50 ppm TWA 200 ppm TWA; 590 mg/m3 TWA	200 ppm TWA; 590 mg/m3 TWA
2-hexanone	591-78-6	ND	10 ppm STEL	5 ppm TWA	100 ppm TWA; 410 mg/m3 TWA

Personal Protection:

Engineering Measures: Local exhaust ventilation is recommended when generating excessive levels of vapors from handling or thermal processing.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color: No data available.
Odor: Mild
Physical State: No data available.
pH: No data available.
Vapor Density: 1.1 (air = 1)
Melting Point: -98 ℃
Flash Point: 52

Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36.0
Lower Flammable/Explosive Limit, % in air:	6.0
Autoignition Temperature:	464 deg C
Decomposition Temperature:	No data available.
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 ℃
Evaporation Rate:	No data available.
Odor Threshold:	No data available.
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	No data available.
VOC % by weight:	89.10
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	No data available.
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	Contains a probable or known human carcinogen.
Reproductive and Developmental Toxicity:	Contains a known human reproductive and/or developmental hazard.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Ingestion:	Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 83.2 mg/L 4 h; Oral LD50 Rat 5628 mg/kg

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.
No data available.	

ACGIH:

Chemical Name	CAS No.
No data available.	

NIOSH:

Chemical Name	CAS No.
No data available.	

NTP:

Chemical Name	CAS No.
No data available.	

IARC:

Chemical Name	CAS No.	Group No.
No data.		Group 1
No data.		Group 2A
No data.		Group 2B

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility: No data
Persistence: No data
Bioaccumulation: No data
Degradability: Biodegrades slowly.
Ecological Toxicity Data: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product: Spent or discarded material is a hazardous waste.
Disposal Methods: Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging: Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:
DOT Proper Shipping Name: Flammable liquids, n.o.s. (Methanol, Acetone)
UN Number: UN1993
Hazard Class: 3
Packing Group: II

International:
IATA Proper Shipping Name: Flammable liquids, n.o.s. (Methanol, Acetone)
UN Number: UN1993
Hazard Class: 3
Packing Group: II

Marine Pollutant: No

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
water	7732-18-5	-	-	-	X
Acetone	67-64-1	X	-	-	X
4-Methyl-2-pentanone	108-10-1	X	X	-	X
Methyl ethyl ketone	78-93-3	X	-	-	X
Tetrahydrofuran	109-99-9	X	-	-	X
2-hexanone	591-78-6	-	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Isobutyl methyl ketone	108-10-1	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox
Methyl n-butyl ketone	591-78-6	Prop 65 Rep Male

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California

methanol	67-56-1	X	X	X	X
water	7732-18-5	-	-	-	-
Acetone	67-64-1	X	X	X	X
4-Methyl-2-pentanone	108-10-1	X	X	X	X
Methyl ethyl ketone	78-93-3	X	X	X	X
Tetrahydrofuran	109-99-9	X	X	X	X
2-hexanone	591-78-6	X	X	X	X

16. OTHER INFORMATION

Prior Version Date: 02/09/12

Disclaimer: Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding prodcuts described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.

Safety Data Sheet

Revision Date: 08/07/13
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**30304 / 524 Calibration Mix #7B**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Revision Number:	3
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:

Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Flammable Liquid Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Inhalation Vapour Category 3
Acute Toxicity - Inhalation Gas Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

GHS Signal Word:

Danger

GHS Hazard:

Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled.
Toxic if inhaled.
Causes damage to organs.

GHS Precautions:

Safety Precautions:

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do no eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:

IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF exposed: Call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment see section 4.
Specific measures see section 4.

	Rinse mouth. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. In case of fire: Use extinguishing media in section 5 for extinction.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal:	Dispose of contents/container according to section 13 of the SDS.
Single Exposure Target Organs:	No data available.
Repeated Exposure Target Organs:	No data available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	98.600000
Methyl methacrylate	80-62-6	201-297-1	0.200000
methyl acrylate	96-33-3	202-500-6	0.200000
allyl chloride	107-05-1	203-457-6	0.200000
nitrobenzene	98-95-3	202-716-0	0.200000
Acrylonitrile	107-13-1	203-466-5	0.200000
pentachloroethane	76-01-7	200-925-1	0.200000
ethyl methacrylate	97-63-2	202-597-5	0.200000

4. FIRST-AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately
Eyes:	Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention. Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.
Skin Contact:	Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water spray or fog may also be effective for extinguishing if swept across the base of the fire. Water can also be used to absorb heat and keep exposed material from being damaged by fire.
Fire and/or Explosion Hazards:	Vapors may be ignited by heat, sparks, flames or other sources of ignition at or above the low flash point giving rise to a Class B fire. Vapors are heavier than air and may travel to a source of ignition and flash back
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained

toxic breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface. Use water spray/fog for cooling.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
Methyl methacrylate	80-62-6	ND	100 ppm STEL	50 ppm TWA 100 ppm TWA; 410 mg/m3 TWA	100 ppm TWA; 410 mg/m3 TWA
methyl acrylate	96-33-3	ND		2 ppm TWA	10 ppm TWA; 35 mg/m3 TWA
allyl chloride	107-05-1	ND	2 ppm STEL	1 ppm TWA	1 ppm TWA; 3 mg/m3 TWA
nitrobenzene	98-95-3	200 ppm IDLH		1 ppm TWA	1 ppm TWA; 5 mg/m3 TWA
Acrylonitrile	107-13-1	85 ppm IDLH		2 ppm TWA 2 ppm TWA; 4.3 mg/m3 TWA	No PEL established
pentachloroethane	76-01-7	ND		No TLV	No data available.
ethyl methacrylate	97-63-2	ND		No TLV	No data available.

Personal Protection:

Engineering Measures: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available.

Skin Protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	No data available.
Odor:	Mild
Physical State:	No data available.
pH:	No data available.
Vapor Density:	1.1 (air = 1)
Melting Point:	-98 ℃
Flash Point:	30
Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36.0
Lower Flammable/Explosive Limit, % in air:	6.0
Autoignition Temperature:	464 deg C
Decomposition Temperature:	No data available.
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 ℃
Evaporation Rate:	No data available.
Odor Threshold:	ND
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	No data available.
VOC % by weight:	98.60
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	No data available.
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	Contains a probable or known human carcinogen.
Reproductive and Developmental Toxicity:	Contains a known human reproductive and/or developmental hazard.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Toxic! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs).
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Skin Absorption:	Upon prolonged or repeated exposure, toxic if absorbed through the skin. Likely to cause systemic damage.
Ingestion:	Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 83.2 mg/L 4 h; Oral LD50 Rat 5628 mg/kg
Benzene, nitro-	98-95-3	Oral LD50 Rat 580 mg/kg; Dermal LD50 Rat 2100 mg/kg; Dermal LD50 Rabbit 760 mg/kg; Inhalation LC50 Rat 556 ppm 4 h
Acrylonitrile	107-13-1	Inhalation LC50 Rat : 425 ppm/4H; Oral LD50 Rat : 78 mg/kg; Oral LD50 Mouse : 27 mg/kg; Dermal LD50 Rabbit : 250 mg/kg

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.	
Nitrobenzene	98-95-3	Present
Acrylonitrile	107-13-1	2 ppm TWA PEL; C 10 ppm (15 min); 1 ppm TWA action level; skin and eye exposure prohibited; cancer hazard (see 29 CFR 1910.1045); {OSHA - 29 CFR 1910 Specifically Regulated Chemicals}

ACGIH:

Chemical Name	CAS No.	
Nitrobenzene	98-95-3	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Acrylonitrile	107-13-1	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans A2-suspected human carcinogen

NIOSH:

Chemical Name	CAS No.	
Acrylonitrile	107-13-1	potential occupational carcinogen

NTP:

Chemical Name	CAS No.
No data available.	

IARC:

Chemical Name	CAS No.	Group No.
No data.		Group 1
No data.		Group 2A
Nitrobenzene	98-95-3	Group 2B
Acrylonitrile	107-13-1	Group 2B
Monograph 71; 1998		

12. ECOLOGICAL INFORMATION

Overview:	Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility:	No data
Persistence:	No data
Bioaccumulation:	No data
Degradability:	Biodegrades slowly.
Ecological Toxicity Data:	No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:	Spent or discarded material is a hazardous waste.
Disposal Methods:	Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging:	Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:

DOT Proper Shipping Name:	Methanol
UN Number:	UN1230
Hazard Class:	3
Packing Group:	II

International:	
IATA Proper Shipping Name:	Methanol
UN Number:	UN1230
Hazard Class:	3 (6.1)
Packing Group:	II

Marine Pollutant: No

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
Methyl methacrylate	80-62-6	X	X	-	X
methyl acrylate	96-33-3	-	X	-	X
allyl chloride	107-05-1	X	X	-	X
nitrobenzene	98-95-3	X	X	X	X
Acrylonitrile	107-13-1	X	X	X	X
pentachloroethane	76-01-7	X	X	-	X
ethyl methacrylate	97-63-2	X	-	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Nitrobenzene	98-95-3	Prop 65 Cancer
Acrylonitrile	107-13-1	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox
Nitrobenzene	98-95-3	Prop 65 Rep Male

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
Methyl methacrylate	80-62-6	X	X	X	X
methyl acrylate	96-33-3	X	X	X	X
allyl chloride	107-05-1	X	X	X	X
nitrobenzene	98-95-3	X	X	X	X
Acrylonitrile	107-13-1	X	X	X	X
pentachloroethane	76-01-7	X	X	X	X
ethyl methacrylate	97-63-2	X	X	X	-

16. OTHER INFORMATION

Prior Version Date: 02/06/12

Disclaimer: Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding prodcuts described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.